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# Improving Food Security of Vulnerable Populations: Direct Distribution of Food Plus Complementary Synergistic Activities
## CARE Honduras Title II Program

*By Becky Myton, Food Security Coordinator, CARE Honduras*
*Photos by Faith Amon*

### Direct Distribution of Food and Food Security

Direct distribution of food is important in disaster and emergency situations and helps people get through the crisis period.

Food distribution is also an important resource in areas with chronic malnutrition and food access and availability problems. However, if food distribution is not accompanied by other interventions aimed at increasing economic, social and environmental security, when food aid terminates, the population will probably not be able to achieve sustainable food security.

To have a lasting impact on the vulnerable population, food distribution in non-emergency programs should be combined with other program activities such as health and nutrition, diversification of agricultural crops, infrastructure development, municipal strengthening, etc.

CARE Honduras has tried to use food as a tool in the struggle to obtain improved household livelihood security and sustainable development of its participants and not as an end in itself to palliate hunger.

### CARE Honduras Food Security Program

CARE Honduras has been implementing a Title II Food Security Program, financed by USAID, in Honduras since 1996, the first program from FY 1996 to 2000 and the current program from FY 2001 to 2005.

### General Objective

The overall goal of the Food Security Program is:

• To improve, in a sustainable manner, the food security of vulnerable populations, at the household, regional, and national levels, in the extremely poor municipalities of western and southern Honduras.

### Strategic Objectives

The program has three strategic objectives (SO):

SO1: To increase, in a sustainable manner, the availability of basic and nutritious foods in vulnerable household in the targeted area.

SO2: To increase, in a sustainable manner, access to nutritious foods by vulnerable households in the targeted area.

SO3: To increase, in a sustainable manner, the biological utilization of food by targeted households.

The Food Security Program consists of three components; each project concentrates on one of the strategic objectives. Some overlap exists which unifies the program and provides a synergistic effect.

1. The objective of the **Food Security Extension** (EXTENSA) is to increase food availability and access by promotion of increased agricultural diversity and production, including

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high-value crops and staple foods, through improved agricultural productivity and natural resource management techniques by subsistence farmers.

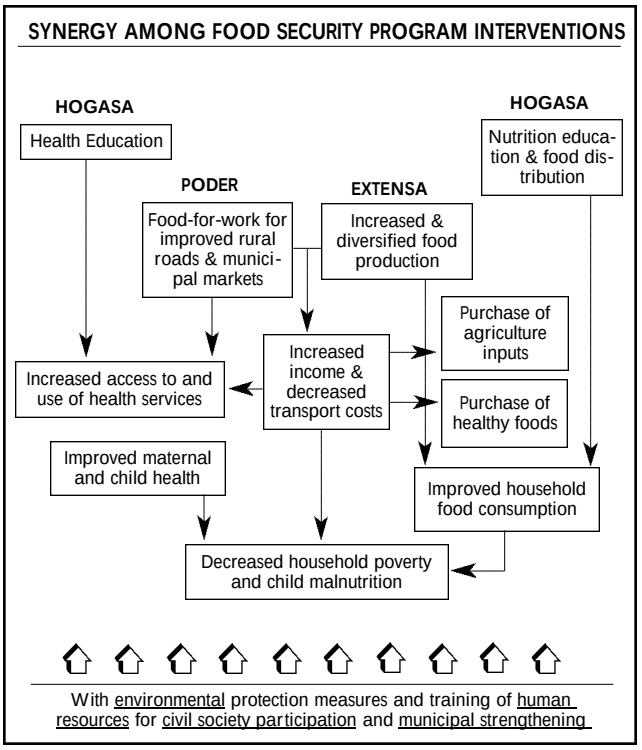
2. **Rural Opportunities for Employment and Development** (PODER) provides food-for-work livelihood protection and promotion by increasing access to and availability of food in the region through the construction and rehabilitation of roads and municipal markets, and by enhancing maternal-child health and utilization of food through improved housing. This intervention also coordinates integrated program activities to strengthen civil society participation in municipal committee planning including the preparation of long range strategic plans.

3. **Community Based Health Services** (HOGASA) distributes food to at-risk women and children to increase food availability, and improve biological utilization of food through improved strengthening of linkages between CARE community health centers, CARE health volunteers and the Ministry of Health. CARE and the Ministry of Health train community volunteers in early treatment of respiratory infections and diarrhea, nutrition and reproductive health.

## Synergy Among the Projects

CARE Honduras realizes that the direct distribution of food by itself is not a sustainable development tool. Food distribution must be integrated synergistically with other interventions to obtain sustainability.

The following figure presents the synergistic relations among the three CARE Honduras Title II projects.




The HOGASA direct food distribution is represented in the upper right hand corner of the diagram. In addition to the direct distribution, HOGASA project includes health and nutrition education, along with child growth monitoring. These actions, combined with improved access to health services from road construction and/or rehabilitation by the PODER project, lead to increased use of health services.

The EXTENSA agriculture activities train small-scale farmers in improved techniques for staple food production and for production of diversified crops that provide nutrients missing from the diet, such as Vitamin A and iron. With improved access through the PODER road construction and/or rehabilitation projects, the sale of agricultural production leads to increased household economic security. This income can be invested in the purchase of agricultural inputs to further increase production. When improvements in income are combined with nutrition education, money will also be invested in the purchase of nutritious food for the household.

Natural resource conservation, especially micro-watershed management is a strong component of this program. Water has become increasingly scarce in Honduras and integrated watershed management is essential for maintaining an adequate supply of water.

## Results and Evaluation of the Program

The final evaluation results of the first program cycle reflect the synergy mentioned above. The most exciting result found in the evaluation carried out in 2001 was a significant reduction in malnutrition both global malnutrition (weight-for-age) in children age 12-23 months and chronic malnutrition (height-for-age) in children 24-59 months (Graph 1).

Food Forum

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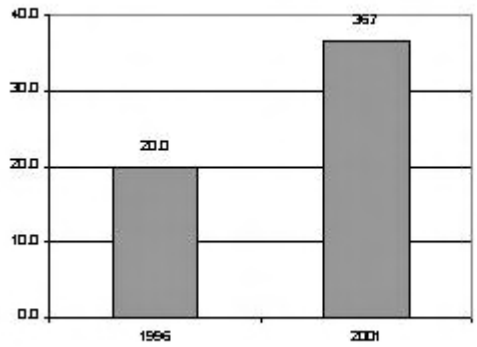
Graph No.3

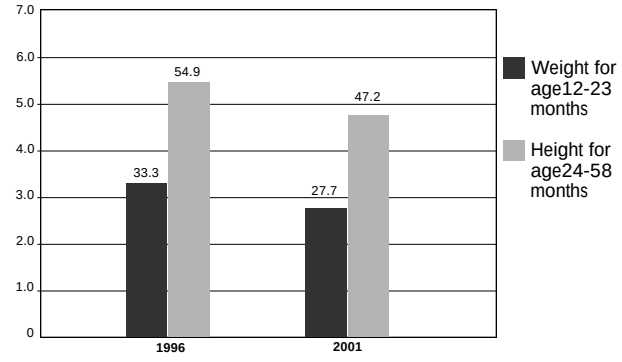
**PERCENT OF COMMUNITIES WITH ACCESS TO A MARKET IN LESS THAN ONE HOUR**




The analysis of the yield of basic grains shows that the yield for corn increased while the yield for beans and sorghum decreased (Graph 2). This decrease was due to the droughts that have affected Honduras during the past few years.

Graph No.1

**PERCENT OF CHILD MALNUTRITION, BY TYPE AND AGE GROUP**

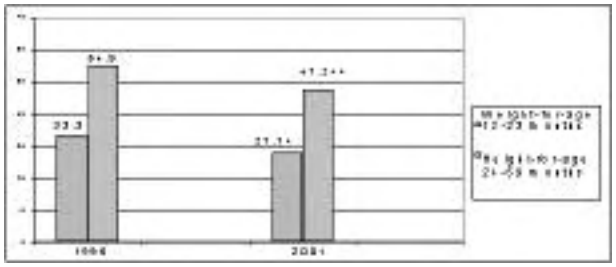



Significant Difference + p<0.05, ++ p<0.01

However, even though the yield for beans and sorghum decreased, the net monthly income from the sale of basic grains increased (Table 1). This can be linked to the increased access to markets that the improved and new roads (a PODER food-for-work activity) bring to producers (Graph 3).

Graph No.2

**YIELD OF BASIC GRAINS, IN SACKS (100LB.) PER HECTA**



Significant Difference Corn 1996::2001 p<0.01.

Table No.1

**NET MONTHLY INCOME FROM SALE OF AGRICULTURAL PRODUCTION, PER HECTARE PLANTED (IN CONSTANT US DOLLARS)**

| Crop | 1996 | 2001 |
|---|---|---|
| | Avg.$ | Avg.$ |
| **Basic grains** | 8.84 | 16.98 |
| Corn | 2.40 | 11.85 |
| Beans | 8.81 | 10.95 |
| Sorghum | 4.77 | 8.80 |

## Project Innovations Addressing Changing Environmental Situations

Drip micro-irrigation

Due to the prolonged droughts in recent years EXTENSA has initiated new interventions including drip micro-irrigation systems and the use of solar pumps to raise water to the drip micro-irrigation areas.

*Solar panels and cookers*

Solar panels have been installed in several schools and health centers in communities with no electricity. This was carried out with the help of land-mine victims from Nicaragua. Solar cookers are also being introduced with great success. Villagers are being trained in how to build solar cookers and establish small cottage industries. The use of solar cookers greatly reduces the use of firewood.

Lessons Learned

1. The success of the CARE Honduras Food Security Program is due to the use of food as a development tool for sustainability and not just as direct distribution.
2. The synergy among the three projects (health, agriculture and municipal strengthening and infrastructure) contributes to the sustainability of the program.
3. The involvement and empowerment of the project participants in the planning and carrying out of the activities is crucial to the acceptance of the food security activities.
4. The use of locally trained community health volunteers has been extremely successful and has contributed greatly to the success of the health component.
5. The implementation of activities such as the use of drip irrigation and solar energy as responses to changing environmental conditions and emergencies can enhance the sustainable impact of a Food Security Program.

# NEWS FROM WASHINGTON

*by Ellen Levinson, Food Aid Coalition*

*July 29, 2002*

The Farm Security and Rural Investment Act of 2002, commonly called the "2002 Farm Bill" or "FSRIA," was enacted into law on May 13, 2002 (P.L. 107-171). Many of the changes in food aid programs anticipated in my last column in this newsletter were enacted. Some of the changes were immediately effective, while others require changes in guidelines and procedures by USAID and USDA, which will take place over the next 9 months to one year. These changes should also be reflected in the FFP Office's new Strategic Plan, which is currently under development.

Additional changes will take place through legislative corrections and improvements passed by Congress over the next few months. Further, the FY 2003 appropriations for PL 480 will provide a 40% increase in title II funding over FY 2002 to enable USAID to meet the higher minimum tonnages required by law and in support of the President's request for more funding for this program. Today's article reviews some of the key legislative changes and the next steps in the process of implementing the changes.

Food for Peace, Title II

**Program Diversity.** The Administrator is required to consider proposals that incorporate a variety of program objectives and strategic plans based on the identification by eligible organizations of appropriate activities to assist development in foreign countries. Thus, as the FFP Office works on its new strategic objectives for food aid, this new provision should be taken into account and the agricultural production and childhood nutrition focus of USAID's current Food Security and Food Aid Policy should be broadened to accommodate other objectives.

**Streamlining USAID Management.** Within one year after enactment, USAID is directed to streamline title II procedures and guidelines and to the maximum extent possible incorporate such changes into the guidelines and procedures for fiscal year 2004 programs and resource requests for ongoing programs. The changes must include – (1) expediting and bringing greater consistency to the title II program review and approval processes; (2) streamlining the information collection and reporting systems by identifying the critical information that needs to be monitored and reported on by eligible organizations; and (3) for approved programs, providing greater flexibility for an eligible organization to make modifications in program activities to achieve program results with streamlined procedures for reporting such modifications. Streamlining efforts shall be accomplished using the FACG consultative process and at least 30 days before changes are finalized, public comment shall be solicited.

The first step in implementing this provision was the issuance of draft FY 2004 DAP Guidelines for comment by FFP. A group of PVOs, the Coalition for Food Aid, submitted comments reflecting the legislative mandates for streamlining. These and other comments are being reviewed by the FFP Office and the final Guidelines should be available in August.

The second step was the FFP June meeting with Cooperating Sponsors, USAID representatives and industry groups, where ideas were shared about how to apply these new requirements. The third step is the FFP Office process of developing its new strategic plan in consultation with Cooperating Sponsors. In this process, all are cognizant that a new partnership is needed to abide by the letter and intent of the law. Fourth, at some point, the FACG will have to be involved formally in the process.

By November 2002, USAID has to provide a progress report to Congress on its efforts to work with Cooperating Sponsors to achieve these streamlining objectives. In addition, by January 2003, USAID must report to Congress on improvements made to date and planned upgrades in the Agency's information management, procurement and financial management systems to accommodate title II administrative needs.

**Support Funds.** The section 202(e) funds for management and logistics support are increased from $10 - $28 million to 5-10% of title II funding (this year it would have been $42.5 - $85 million). This additional amount is available starting in FY 2002.

USAID is now permitted to use title II funds to pay for ITSH and distribution of commodities used in nonemergency programs in countries that meet the IDA poverty criteria ($890 per capita income or less).

**Monetization.** The law now permits sales for dollars or foreign currencies and continues to allow monetization to fund programs in one country or more than one country in a region. This is effective immediately.

The law also states that the sales price for the commodity should be for the reasonable market price in the economy where the commodity is sold. This is effective immediately. FFP has not decided how it will implement this policy. However, it will not longer use the "benchmark price" for monetization.

Further, USAID is still in negotiations with the White House Office of Management and Budget (OMB) on how it will implement the Administration's new policy to reduce title II monetization and to focus title II on "feeding programs." House and Senate reports accompanying the FY 2003 Agriculture Appropriations Bill, which provides the funding for PL 480, state that Congress is concerned about policies to place arbitrary limits on monetization and express support for self-help and development-oriented food aid programs.

**Increased Tonnage.** The law increases the minimum tonnage level for title II to 2.5 MMT each fiscal year (from 2.025 MMT) and the amount that must be provided for nonemergency programs is raised to 1.875 MMT each fiscal year (from 1.55 MMT). The Administration has already indicated it does not plan to meet the nonemergency tonnage level, because it is diverting title II funds to emergencies.

Both the House and Senate versions of the FY 2003 Agriculture Appropriations Bill increase title II funding by about a 40%, to $1.2 billion and $1.185 billion, respectively. This should be enough to fund 2.7 MMT of food aid. Both the House and Senate bills include report language stating that the congressional committees expect USAID to provide 1.875 MMT for nonemergency programs. If the remaining funds are not enough to meet emergency needs, then the President should use other authorities available (such as Commodity Credit Corporation authorities, the Bill Emerson Humanitarian Trust or emergency appropriations) to meet

*continued from page 4*

these needs, rather than taking funds away from nonemergency programs. Thus, Congress not satisfied with the Administration's plans to ignore the nonemergency level.

**120-Day Review.** The law requires USAID to decide whether to enterinto an agreement with an eligible organization for one or more countries within 120 days after the submission of the proposal, and no longer requires USAID mission approval before a PVO proposal is considered by USAID/W. This policy will be implemented with the FY 2004 program approvals.

**Public Commenton Policy Guidance.** The annual "policy letter" drafted by FFP must be provided to interested parties for comment30 days before the policy letter is finalized.

**Food for Prgress**

Levels of Assistance and Authority. Not less than 400,000 MT of commodities may be provided in any fiscal year through CCC funding to implement the Food for Progress program. As before, appropriated funds for the PL 480 title I program may be used for Food for Progress programs, but these amounts will not count toward the 400,000 MT minimum. The Administration has not indicated that it plans to abide by the 400,000 MTminimum. It has only asked embassies to provided estimated requests for government-to-government FY 2003 Food for Progress programs funded with PL 480 title I money.

In addition, even though the law clearly makes NGOs eligible participants, and report language in the 2002 Farm Bill encourages the use of NGOs, the Administration has not yet decided whetherit will allow NGOs to continue to participate.

**Agreement Terms.** Multi year, multi-country agreements are allowed and monetization is permitted for dollars or foreign currency.

**Deadlines.** By January 2003, the President will review and make needed changes in program procedures for Food for Progress to streamline, improve and clarify the application, approval and implementation procedures.

The President shall report to the Congress on the agreements signed by December1 of each applicable fiscal year. So far, the Administration has not announced a program for FY 2003 using CCC funds, so it is unlikely that they will have much to report by December.

Section 416

**Time Limits.** Requires the Secretary to publish in the Federal Register not later than October31 of each FY, an estimate of the commodities that shall be made available and encourages the Secretary to finalize agreements not later than December31 of the applicable fiscal year.

Even though the Administration announced that only governments will be eligible for USDA programs in the future, the Section 416 statute requires the Administration to offer Section 416 commodities to PVOs and cooperatives if it makes commodities available to country. Only nonfat dry milk is available in FY 2003, since the Administration will not longer buy surplus commodities off the market to donate abroad under Section 416. There is pressure from Congress for the Administration to change this policy, particularlyto provide the additional food aid required for the southern African drought. So far, however, the Administration has refused to change.

**Agreement Terms.** Sales may be for foreign currencies or dollars, and multi-year agreements and multi-country proposals are allowed. An amendment passed after enactmentof the 2002 Farm Bill adds that proceeds from monetization may be used outside of the country of origin to carry out the purposes of the Section 416 program. This would allow, for example, funds for administrative costs incurred at headquarters or purchases ofmedicines in a third country.

**Improved Management.** Within 270 days, USDA shall make necessary changes in regulations, policies, and procedures to streamline, improve and clarify the application, approval, and implementation processes for Food for Progress.

International Food for Education Program

For FY 2003, $100 million in CCC funds is made available for a newly-established McGovern-Dole International Food for Education and Child Nutrition Program, which would include the cost of commodities, transportation, ITSH, and administrative costs. Monetization is also permitted to achieve program objectives. The purpose is to provide commodities and financial and technical assistance to carry out (1) preschool and school food for education programs to improve food security, reduce the incidence of hunger, and improve literacy and primary education, and (2) maternal, infant and child nutrition programs for pregnant women, nursing mothers, infants and children who are 5 years of age or younger.

The Administration has not decided whetherUSDA or USAID will run the program. One of the difficulties is that it is only funded for one year. The report language in the Farm Bill seems to indicate that this would be a way to continue some of the pilot Global Food for Education programs that USDA funded over the past two years.

## Food Aid and Food Security Assessment

*by the FANTA Project*

Over800 million people in developing countries do not have, at all times, physical and economic access to sufficient, safe, and nutritious foods to meet their daily dietary needs and food preferences for an active and healthy life. A major response by the U.S. Government to the problem of food insecurity is the nearly one billion dollars spentannually on food aid; the Title II development (non-emergency) food aid program constitutes the single largest source of USAID funding focused on sustainable food security.

Title II development food aid directly supplements the diet of young children and pregnantand lactating mothers, and mobilizes poor people's labor to feed families and build local commercial and agricultural infrastructure necessary for sustainable rural development. Proceeds from the monetization of Title II development food aid are used to support the provision of basic health services, nutrition education, agricultural extension and training, and local capacity building, which help insure that the program's longer-term objective of sustainable increases in food security is met. When Title II development food aid is integrated with otherUSAID resources, it enhances the effectiveness of child survival, agriculture, income generation, basic education and community development activities targeting the rural poor.

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In 1995, USAID issued a Food Aid and Food Security Policy Paper that defined the general purposes and use of food aid resources in developing countries. Over the past year, DCHA/FFP and DCHA/PPM, through the GH/HIDN Food and Nutrition Technical Assistance project (FANTA), carried out an assessment of the Title II food aid development programs and their progress in meeting the food security goals laid out in the policy paper.

The assessment found that the DCHA/FFP and its Cooperating Sponsor and Mission partners have responded to the goals set forth in the policy paper including: greater focus on the most food insecure regions and countries, especially in sub-Saharan Africa; increased emphasis on improving agricultural productivity and household nutrition, including a dramatic improvement in the design of Title II agricultural and nutrition programs with the integration of complementary activities such as technical assistance and training, largely funded by monetization; better results and results reporting; and better collaboration among partners. The assessment also highlighted the constant tension arising from the pressure to use commodity resources as food and the need for cash resources for sustainable impacts.

The assessment report contains twenty-one key recommendations for program and policy improvements in two priority technical sectors—agriculture and maternal and child health—and for improving the management of food aid resources. The recommendations are as follows:

A. Implementation of the Policy Paper Programmatic and Management Priorities

1. FFP should adopt the following as the primary determinants of whether food aid is used in the form of food, local currency or a combination of both: the nature of the food security problem, the design of the appropriate solution, local market conditions, availability of complementary resources and CSs' management and technical capacity (p. 30).

2. CSs should make greater efforts to find appropriate ways to use food to address food insecurity issues (p. 30).

3. Congress should expand funds available through the current P.L. 480, Title II, section 202(e) mechanism, create a complementary source of cash funds for Title II programming and/or fund internal transport, shipping and handling costs directly, so that a larger share of the proceeds from monetization would be available for programming. Congress should reevaluate the effectiveness of the value-added mandate (p. 30).

4. FFP should intensify its consultation with its food aid partners in formulating policy, particularly when the policy addresses a controversial issue (p. 39).

5. FFP should put priority on developing a relief-to-development strategy for Title II resources that recognizes the oscillatory and coincident nature of most relief and development transitions (p. 37).

6. FFP should prepare guidance on improving food security for HIV/AIDS-affected households and for households in urban and peri-urban environments (p. 19).

7. CSs should intensify efforts to integrate their Title II activities with other complementary development efforts or partners. Missions should improve integration of the Title II program with a broader spectrum of Strategic Objectives (p. 35).

8. CSs should focus on institutionalizing their strengthened capacity and improving quality control in the field (p. 26).

9. CSs and FFP should standardize the methodology for results reporting and widen the dissemination and use of best practices across the Title II program (p. 22).

10. FFP should allow greater flexibility in DAP length in conjunction with stricter exit criteria. CSs should assist communities to find alternatives to CS services early in the program cycle (p. 36).

11. FFP should establish clear, concise DAP guidelines and not rewrite them each year. CSs should be held accountable to the guidance that was in place at the time DAPs were approved (p. 39).

12. FFP should establish a clear line of authority and clarify for its Title II partners the roles of different management units within USAID (FFP, Regional Bureaus and Missions) (p. 39).

B. Agricultural Productivity Sector

13. CSs and FFP should make sure that DAP proposals demonstrate knowledge of local farming systems and market opportunities, emphasize interventions that address the priority concerns and constraints of farm families and describe the information systems to be used to refine interventions during DAP implementation (p. 49).

14. CSs need to make sure that they adequately deal with three potential problem areas: 1) finding the right balance between food and cash crops, 2) dealing with household cash flow and liquidity constraints, and 3) closing the seasonal food gap through an increased focus on improved storage, small-scale post-harvest transformation, crop diversification and market opportunities (p. 49).

15. When a DAP includes a marketing component, it is absolutely necessary that the CS conduct a market study as part of the DAP proposal preparation and that it demonstrate adequate evidence of technical competency of the CS or a close collaborator (p. 57).

16. CSs should build a gender strategy into DAPs and commit to being persistent and creative in finding workable solutions throughout the LOA (p. 49).

C. Household Nutrition: Maternal Child Health and Nutrition Sector

17. CSs should put major emphasis on changing critical nutritional and health behaviors (p. 78).

18. CSs should continue to use growth monitoring and promotion as a key strategy to improve the nutritional status of children under 3 years old and improve referral and follow-up of malnourished children (p. 76).

19. CSs should focus increased attention on strategies to improve women's nutrition (p. 79).

20. CSs should focus efforts with MOHs on the integration of nutrition into essential maternal and child health services (p. 82).

21. CSs should establish country-specific criteria and verification methods to ensure that the neediest communities are selected and food resources are not used ineffectively (p. 74).

*Editor's Note: This article is based largely on a piece originally published as: Moseley, W.G. and B.I. Logan. 2001. "Conceptualizing Hunger Dynamics: A Critical Examination of Two Famine Early Warning Methodologies in Zimbabwe." Applied Geography. 21(3): 223-248. It has been shortened for this publication and is reprinted with permission of the authors.*

# A Critical Examination of Two Famine Early Warning Methodologies in Zimbabwe: What Lessons May be Learned?

*By William G. Moseley and B. Ikubolajeh Logan*

This paper assesses the conceptual and practical validity of two famine early warning systems in Zimbabwe, the Save the Children Fund - United Kingdom's (SCF-UK) household food economy approach and the United States Agency for International Development Famine Early Warning System's (USAID FEWS) maize equivalency approach. This broad objective is couched in terms of two research questions: 1) How do the SCF-UK's household food economy and FEWS' maize equivalency approaches compare to the 'older' early warning methodologies? 2) What are the key components of rural food economies in Zimbabwe and how relevant is the conceptual logic of each early warning system in this empirical context?

## Major Characteristics of Food Systems and Food Security in Zimbabwe

A famine early warning system is useful only to the extent that it addresses the peculiarities of a specific context. Our fieldwork suggests that the three defining characteristics of Zimbabwean food security are: spatial differences in agroecology and market infrastructure, land tenure, and high levels of food purchase and wage labour (Earl and Moseley 1996). Zimbabwe normally produces enough grain domestically to satisfy national needs. The national food balance disguises considerable variation in food insecurity or vulnerability between different regions and between wealth strata in any given region.

## Agroecology, Market Infrastructure, and Land Tenure

Food security in Zimbabwe is often related to major ecological zones (the highvelt, middlevelt, and lowvelt), the degree of market infrastructure, and land tenure. The highvelt (or high plain) contains the most productive farmland in the country, and has more and better quality roads. Most productive land, and half of all land in the country, is owned by the white minority in a land tenure system left over from colonial times. In contrast, the lowvelt (or low plain) is semi-arid, less productive, and has a less developed network of roads and markets. The indigenous, rural population resides in the lowveltand middlevelt, which are also more prone to drought. Based on these differences in agroecology and market infrastructure (which influence prices), as well as differences between areas in household strategies to acquire food and income (which influence the sensitivity of a food system to various types of shocks), Earl and Moseley (1996) divided up Zimbabwe into 25 food economy zones, or homogeneous production zones, encompassing the the Zimbabwean rural population (roughly 7,783,000 people, or 75% of the total population, in 1996). The disparate land tenure in Zimbabwe (e.g., communal vs. commercial) means that many zones are not contiguous. Famine early warning and hunger would be less of issue if land were more equally distributed.

## Food Purchase and Wage Labor

Many households in Zimbabwe are not able to grow all of their own food. On average, a rural Zimbabwean household purchases 33% of its food in a normal year. The importance of food purchases varies regionally in the rural areas: typical households on the commercial farms buy 90-100% of their food, whereas typical households in the region of Gokwe purchase 0-10 % of their food on average. The graphic below depicts these vastly different levels of food purchases and the sources of income used to make them.

**Sources of Cash and Income for Typical Households in Two Different Zimbabwean Food Economy Zone**


The large amount of food purchase in the country makes both the price of maize meal (the staple food) and cash income very important food security monitoring variables. Wage labor is quite common: Zimbabwe's approximately 2 million permanent farm workers (i.e., workers who reside permanently on large commercial farms) generate most of their income from wages (and purchase most of their food). Among small-hold farming households the man often works in the city and the woman runs the farm. Cash is also earned by working seasonally on commercial farms, working for wealthier neighbors, or working in South Africa. Livestock sales and various forms of small enterprise are other sources of income.

## Developments in Famine Early Warning

At the 1974 World Food Conference, UN agencies and donors recognized a need to establish information systems which would monitor national food production and provide an early indication of the need for intervention (Eele 1994; Babu and Quinn 1994; Quinn and Kennedy 1994). USAID and the United Nations Food and Agriculture Organization (FAO) subsequently established systems whose methodology is called the food balance sheet approach. These systems calculated national food needs (population times per capita grain needs) and compared them to the sum of agricultural production, stocks and net imports (imports minus exports) (SADC 1998).

Work by Sen (1981) on exchange entitlements, and the unexpected Sahelian famine of the mid-1980s, demonstrated

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3. The information presented regarding the nature of food security in Zimbabwe was collected while the lead author worked for the Save the Children Fund (UK) in 1996-97 as a RiskMap Advisor based in Harare, Zimbabwe.

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flaws in the food balance sheet approach, which equates food supply with food access. In response, USAID and others developed an indicator-based approach. This approach often relies on vegetation indices to bolster production estimates and assembles government data on food supply, food access, and health. The trajectories of these indicators are analyzed over time to determine whether food security conditions are deteriorating or improving. The indicators are also often combined into a general index of vulnerability (FEWS and FSTAU 1997, FEWS 1997). This approach is still used by FEWS and others in many African countries, especially where data availability is limited.

**FEWS Indicator Approach Assumptions**

- Famine is the result of a process, not a catastrophic event;
- Famine has observable indicators;
- A progression of indicators reflects the degree of vulnerability to famine;
- Indicators vary between places and through time; and
- Some indicators appear early enough to permit mitigative action.

(FEWS 1997: 12)

While the indicator-based approach is an improvement over food balance sheets in that it tries to account for access, there are still concerns related to its conceptual validity, interpretation, and usefulness to policymakers. The first problem is how to weight each indicator in a composite index of vulnerability. Second, it is difficult to compare one country's composite vulnerability index to other countries that might have indices composed of different indicators with different weights. Finally, while it allows statements about relative vulnerability in different areas of a country, it can not quantify actual food deficits, making interpretation difficult for policymakers.

### Two Newer Early Warning Systems in Zimbabwe

The most recent round of innovation in the famine early warning field has led to the development of methodologies that attempt both to quantify and account for variation in access at the sub-national level. Two systems that are part of this 'third wave of innovation' are operating in Zimbabwe: the FEWS maize equivalency and the SCF-UK household food economy approaches. While these systems share much in common, there are important differences in the way they assemble information and conceptualize hunger.

The FEWS maize equivalency approach operates at the national level and covers all communal areas. The SCF-UK household food economy approach has only been implemented in the Binga and Kariba districts. We applied the FEWS approach in the Manjolo Communal Area of Binga District using input information derived from Government of Zimbabwe data sources, which allowed us to compare it with the SCF-UK approach. The analysis pertains to the period from April 1996 until March 1997 (1996/97 was considered to be an above average year for crop production).

### FEWS Maize Equivalency

FEWS began to use a modified income estimation or maize equivalency approach in Zimbabwe in 1996-97 due to concerns over the indicator-based approach (Eilerts and Vhurumuku 1997; FEWS and NEWU 1998). FEWS Zimbabwe assembles data from secondary sources (mainly governmental) on food production, cash income, and transfers/entitlements for sub-national units known as communal land areas, which are then converted to a common metric of per capita maize equivalents by communal area. Sources of income are converted to maize equivalents by dividing the amount of income by the price of a kilogram of maize. The sum of maize equivalents (from different sources of food and income) is then compared to a threshold value of 250 kilograms of maize per capita per annum to determine if there is a shortfall or surplus. The FEWS threshold is considerably higher than the 154 kilogram per capita per annum used by the National Early Warning Unit (NEWU) (Eilerts and Vhurumuku 1997: 2).

Maize equivalents are added sequentially, starting with what are believed to be the 'best' quality data, which are "systematically and regularly collected at the communal land level, cover a relatively long period, and are relatively free from known error and bias." (Eilerts and Vhurumuku 1997: 2). An initial maize total is calculated, and further maize equivalents based on data of 'acceptable' quality are added only for those communal areas that had a shortfall after the first step. Acceptable data are "those which relay information about important production and other income or transfer sources, are systematically collected and reasonably free from known error or bias, but which may not be provided at the level of analysis desired, or may not cover all areas, be regularly collected, or not be as recent as other data used." (Eilerts and Vhurumuku 1997: 2). Areas with a shortfall after the first two steps are then evaluated for extenuating conditions based on local knowledge or specialised data sources, to determine whether there is a genuine food shortage or whether there are other, unaccounted for, sources of food and income. The final deficit is calculated by subtracting all per capita maize equivalents (from steps one, two and three) from 250 kilograms. The difference, or per capita shortfall, is multiplied by the population of the area to derive a food deficit figure.

In the Manjolo communal area, both 'best quality' and 'acceptable quality' data were used to arrive at maize equivalents of 101 kilograms. This per capita deficit figure is then multiplied by the population of Manjolo (68,237 persons) to determine the food shortfall, 10,167 metric tonnes. FEWS officially reports the deficit without factoring in coping strategies, as it does not believe households should be required to run down their resources in order to avoid hunger.

**FEWS Maize Equivalency Strengths**

- Sequential data analysis starting with "best quality" data and adding lower quality as needed
- Transparency of maize equivalents aids policymakers in understanding analysis
- Attention to sources of income alleviates some food crop bias
- Allows quantification of potential grain short falls

**FEWS Maize Equivalency Weaknesses**

- Does not highlight disparities in food production and income between segments of population in same communal area
- Highly dependent on data quality
- Shortage in one area is not assumed to affect price or supply in neighboring areas

### SCF-UK Household Food Economy Approach

The second, newer early warning system in Zimbabwe, the SCF-UK household food economy approach, is a stand-alone computer package called RiskMap (SCF-UK 1997, Seaman 1997, Seaman 2000). A baseline database for a typical year is developed, in which the country is divided into food economy zones - areas that share broadly similar livelihood patterns. For each area, research using semi-structured interviews

*continued from page 8*

with key informants outlines the relative importance of different sources of food and income, asset levels, coping strategies, and market structure in a normal year. Baseline data are registered in terms of the percentage of annual household food needs that are normally met by a particular source for a rich, modal or poor household. It is assumed that the poorest households attain enough calories to survive in normal years (1900 kcals per person per day). Annual change is measured against the baseline in order to determine vulnerability in a year, and similar calculations are undertaken for all major sources of food and income. The baseline database contains information regarding households' abilities to use coping strategies (e.g., normal levels of food stocks and cash reserves) and the order in which they are typically employed. The analyst can model typical coping strategies, and exclude some that are not viable in a particular year from the deficit calculations.

The SCF-UK household food economy approach was also tested in the Manjolo communal area, which intersects with four of SCF-UK's food economy zones. Manjolo's population is split between these zones as follows: Lake Kariba Agro-Fishers (20% of Manjolo population), Poor Resource Kariba Valley (45%), Kariangwe (25%), and Lusulu (10%). These areas were evaluated separately, as SCF-UK field surveys indicated that the sources of food and income and their relative importance to household food security are significantly different. Using the same government statistics as FEWS, potential food deficits are determined for each zone and wealth group, and then combined to derive the deficit for the Manjolo area. The current situation is known in some instances (e.g., food crops) and not in others (e.g., remittances). In this comparative analysis we have assumed the situation was normal for employment, remittances and other non-farm income. Ideally a survey would determine current levels of these variables. Mean deficits (i.e., all income groups combined) for each of the four areas were: 2% for Lake Kariba Agro-Fishers, 4% for Poor Resource Kariba Valley, 6% for Kariangwe, and 0% for Lusulu. These deficits are calculated assuming that no coping strategies would be employed. As a result, the average food deficit for Manjolo communal area was 3.7% of requirements (a weighted average based on population proportions). Food needed to cover this deficit would either be 545.4 metric tonnes using the SCF-UK average per capita annual maize requirement of 216 kilograms, or 631.2 metric tonnes if the FEWS requirement of 250 kilograms is used.

**SCF-UK Household Food Economy Approach Strengths**

- Incorporates socioeconomic data into analysis (particularly important where income and food production vary substantially between households)
- Food economy areas more homogenous in terms of livelihood strategy - reduce potential to overlook vulnerable groups
- Use of "normal year" baseline proportions shows relative importance of source of income or food in comparison with others to a particular group

**SCF-UK Household Food Economy Approach Weaknesses**

- Assumption that even the poorest households receive enough calories in normal years can overlook chronic malnutrition
- Concept of "normal year" less useful in areas where climate is erratic
- Model does not take into account dynamic coping strategies which may permanently alter the way a household procures food
- Food economy areas do not necessarily correspond with administrative boundaries, and may create aid administration problems
- Food economy areas do not interact in grain markets, which are assumed to be local

## Explaining the Divergent Results

Our analysis showed that when the two methods were applied in the same area of the country, they produce drastically different deficit predictions. The SCF-UK household food economy approach predicted a deficit of 545.4 to 631.2 metric tonnes of maize for Manjolo, compared with the 10,167 metric tonne deficit using the FEWS maize equivalency methodology. Differences may be attributable to two factors: use of data sources, and conceptual modelling of food security systems.

### Use of Government Statistics and Survey Data

The FEWS maize equivalency and SCF-UK household food economy approaches employ government statistics and household survey data differently. According to government sources, Manjolo farmers had an average grain harvest of 41 kilograms per capita in 1996/97. FEWS equates this figure to 16% of annual food requirements. In contrast, SCF-UK determines that the harvest was 110% of normal compared to the 1990s average, and multiplies this percentage by the baseline percentage of food needs met by food crops for rich, modal and poor families in the area (55-60%). It determines that 60-65% of caloric needs were met by food crops for typical households in 1996/97, significantly different from the 16% of the annual food requirement that was derived by the FEWS methodology.

The reliability of each method is dependent on the level of accuracy of government statistics. It is also possible that government data is more reliable in some areas of the country than others. An examination of actual government statistics for Manjolo communal area show that the average number of calories for all sources of food and income (including relief) in the 1990s is 114 kgs or 46% of annual needs (using FEWS annual requirement of 250 kg per capita). By comparison, the average for the 1980s is approximately 139 kgs or 56% of annual needs. It seems unlikely that anyone would still be alive in Manjolo if these figures were true. The percentage of annual food needs met will change if different annual maize requirements are employed as the benchmark. However, the shortfall in the long term average (no matter which annual maize requirement is used) suggests that some sources of food and income are being underreported or not captured at all.

In comparing government data to household surveys, FEWS notes that "[t]he impersonal nature of the data sets available at these [governmental] levels are a strength in allowing food security conditions to be assessed objectively…, compared to household surveys." (FEWS and FSTAU 1997) The baseline data in the SCF-UK approach could be less valid because they are derived from qualitative interviews (e.g., Eilerts 1997) rather than a large, random sample of households. SCF-UK's reliance on key informant interviews is partly based on a desire to test a cost-effective means of collecting baseline data. Without an exhaustive number of household surveys, it is difficult to assess baseline profiles' accuracy. One accuracy test performed on the Zimbabwe baseline database was a hindcasting exercise involving 1992 harvest estimates and cattle off-take information (c.f., Boudreau 1997). Predictions from this exercise compared favorably to

*1900 kcals is the minimum average individual (average of all age groups, males and females, in a typical developing country) daily requirement (FAO 1993).*

*continued from page 9*

historical accounts of food shortages in the 1992 drought.

The validity of the SCF-UK database is also related to how often it is updated. The baseline is supposed to represent the typical year scenario, but the normal situation may evolve at different rates in different regions of Zimbabwe.

**The Conceptual Validity of Each Model**

There are key differences in the way that the SCF-UK and FEWS methodologies integrate information and conceptualize food systems, which may be evaluated in terms of Zimbabwean realities.

While the FEWS' maize equivalency approach uses communal areas as its basic unit of analysis, SCF-UK uses food economy zones. FEWS's approach provides information according to a unit at which government relief efforts are undertaken. However, such units of analysis may be very heterogeneous in nature. A single communal area may include different agroecological zones, ethnic groups, and varying levels of market infrastructure (which may impact food production and access). Communal areas also encompass only small-hold farmers, as both the urban and permanent farm worker populations often live outside of these areas.

SCF-UK food economy zones (if correctly defined) can contain a homogeneous population. In Manjolo, this means that four sub-areas are being assessed rather than one (probably accounting for some of the difference in deficit predictions). However, in Zimbabwe, none of the food economy zones perfectly match up with one communal area. This discrepancy should not necessarily preclude analyses using one type of unit while reporting the results in administrative units, but food economy units should be converted back to administrative units for reporting.

The selection and relative weight accorded to data parameters differs between the FEWS and SCF-UK models. In some instances, FEWS data quality concerns may override consideration of parameters deemed important by a conceptual model of Zimbabwean food systems. In contrast, SCF-UK determines the parameters it monitors based on field surveys, not government data availability. In many instances, information is required by the SCF-UK model that is not available on an annual basis from government sources, e.g., levels of wild food collection. In these cases, the analyst must either conduct a survey or make an informed judgement call.

FEWS and SCF-UK differ in the relative weight they assign different parameters in their conceptual models of household food security. FEWS straight-forwardly adds sources of food and income whereas SCF-UK weights these data based on the relative importance of a source of food or income in its baseline - an important difference when one considers the nature and availability of different types of data in Zimbabwe. Different weighting of government data impacts the deficit predictions produced by each methodology.

As previously discussed, the household food economy approach disaggregates its analysis in terms of income groups (poor, mode and rich), whereas FEWS does not as the secondary data sources do not permit it. However, agricultural production and income generating levels differ greatly between rich and poor in nearly all areas of Zimbabwe. It is not unusual for the top 20% of producers to generate 60-85% of market surpluses (Jackson 1999). In the absence of disaggregated analyses, these production disparities disguise deficits among the most vulnerable.

The final conceptual difference between the two methodologies is the treatment of food produced and food acquired through purchase. FEWS uses the prevailing market price to convert all sources of income to maize equivalents on the assumption that food is always available at the local market if consumers can pay for it. FEWS also assumes that the food value of these income sources will remain fairly constant during periods of food shortage. SCF-UK distinguishes between food that is acquired directly through own production and food that is acquired indirectly through purchase. For food that is acquired through purchase, quantities obtained are allowed to vary if: 1) income varies due to market effects or 2) food prices change due to varying demand. There are at least two problems with the SCF-UK food market model in the Zimbabwean context. First, prices vary according to elasticities and there is a general data problem in obtaining these figures for different types of markets (e.g., food, livestock, labour). Second, RiskMap does not allow increased food demand in a neighboring area to affect local food prices (although other types of markets are shared).

Conc lusi on

In relation to the broad objective of this paper, we first sought to determine the strengths and weaknesses of SCF-UK's household food economy and FEWS' maize equivalency approaches in comparison to other early warning methodologies. Both methodologies attempt to quantify shortfalls and access at the sub-national level. The two also seek to combine different sources of food and income into annual food needs. The FEWS approach examines the situation of the average individual within a particular administrative unit. The SCF-UK household food economy approach seeks to understand the situation of wealthy, modal, and poor households in a socio-ecologically determined food economy zone.

When the FEWS maize equivalency and SCF-UK household food economy approaches were employed in Manjolo Communal area of Zimbabwe, they produced food deficit estimates that differed significantly. Rather than declaring one food security monitoring system superior to the other, we feel it is better to focus on elements of these systems that seem most promising. An important advance of food economy zones is that they identify homogeneous livelihood units. Nonetheless, this advance is impractical if it can not be related to the administrative units for policy implementation. Analyzing one unit and reporting results in terms of another is not an insurmountable obstacle. Distinguishing between the needs of the rich and poor in any given area is also important, particularly in situations where the disparities are considerable. Combining an understanding of how food systems function at the local level with regularly collected government data warrants further experimentation. Given limited resources, however, food security monitoring systems may always provide an imprecise estimate of food shortfalls.

*4. 1900 kcals is the minimum average individual (average of all age groups, males and females, in a typical developing country) daily requirement (FAO 1993).*

*5. It is noted that FEWS also took the average figures for the 90s and used them to represent the case in 1996/97 for employment, remittances and other non-farm income. Given that SCF-UK had not conducted surveys to determine the current year levels for these categories, the most conservative assumption in this comparative analysis seemed to be to suppose a normal or average situation (thus leaving any difference in outcome of the two analyses dependent on methodology).*

*6. When the scenario was run with coping strategies, the food deficit was zero in all cases.*

# Refugees and Complex Emergencies

*Bibilgraphy by Shane Hough, FSRC Intern, Spring 2002*

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